Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	**)**	
	)	
Improving Public Safety Communications	**)**	
in the 800 MHz Band	**)**	**WT Docket No. 02-55**
Consolidating the 900 MHz Industrial/Land	**)**	
Transportation and Business Pool Channels	**)**	

REPLY COMMENTS
OF
MT COMMUNICATIONS

MT Communications hereby submits its Repy Comments relative to the proposed FCC Notice of Proposed Rulemaking for solving the interference problems that public safety agencies are experiencing all over the country in using an 800 MHz trunked digital and analog systems. These comments are in response to those filed relative to the "Consensus Parties" plan.

I. Introduction and Summary

MT Communications hereafter referred to as MTC is a small independent company

that design, installs, and services Public Safety Radio Systems in the Washington, D. C. area. Our past or present customers include Baltimore City Police, Montgomery County

Maryland, Prince William County Virginia Police, State of Maryland, Gaithersburg City Police, US Marshals and the Chevy Chase Maryland Police Department. We have reviewed the comments and particularly those from Region 20 Public Safety agencies. We believe we have unique views and recommendations that aren't provided by most of the other parties. Since we best know the Baltimore/Washington area, we plan to use it to illustrate problems and our recommended solutions. Interference caused by Nextel and the cellular carriers that surround Public Safety spectrum at 800 MHz is a clear and present danger and has been well documented by one of the oldest local 800 MHz users – Anne Arundel County, Maryland .

After reading the other comments, we are persuaded to change our position and not support the relocation of Public Safety Users to the lower 800 MHz or 700 MHz bands. We agree with CTIA, Small Business in Telecommunications, Baltimore City and many others that the move is too risky, will take too long, has significant legal problems and the relocation funding is too uncertain.

Nextel should be made to purchase the spectrum at 1.9 MHz at auction as all other carriers have to if they need additional channels. If they want to trade one 800 MHz channel for a channel at 1.9 MHz this would seem reasonable. The commission could then give public safety those freed 800 MHz channels but we don't support overall relocation. As just reported by Bloomberg Financial News, Nextel was on the verge of bankruptcy in 2001. Nextel made its first profit in 15 years in 2002. This same article points out that Verizon and Cingular will likely offer the same push-to-talk feature that

has been Nextel's exclusive selling feature. With major competition, Nextel may not be able to pay for this relocation in a 4 year installment plan. Under no circumstances should the project be undertaken without the funds being escrowed. Nextel could again have major financial problems. In short, we believe the Consensus Plan is a creative strategy by Nextel to acquire more and better spectrum.

Since Motorola has most of the state and local 800 MHz public safety market in the U. S., all in the Mid Atlantic area and they are the sole source supplier to and a major stockholder of Nextel, they should be made to help correct this problem. Motorola created and installed most of the technology that is causing the interference problems. We contend that in the local area such as Montgomery County, Prince William, and most others jurisdictions that are putting in new systems that Motorola's own Best Practices Guide is not being followed! Motorola stands to financially benefit the most from funds spent to correct this public safety problem.

Because Motorola essentially has a monopoly position in the 800 MHz trunked market, we believe that there has not been technical innovation in this market.. We think that the Commission and DOJ should investigate Motorola marketing power in this area. The technical innovation that is need is to increase the receiver intermodulation rejection by 4 or 5 dB for only the portable radios. The mobile and portable do not suffer from this interference. The entire upheaval can be avoided if this one technical change is made.

MTC believes that there are several possible approaches to retrofit existing units to solve this problem. The portables are clearly the easiest to rotate or modify!

II. A Review of the Comments Indicate that the Consensus Plan is high risk and may not result in reduced interference.

After studying the Plan and the comments of a number of groups that are opposed to the Plan, we have come to conclusion that the relocation is too complicated, takes about 42 months, and has scores of steps or milestones which will likely not happen. While relocation has the promise of lower interference, they may be other sources that may cause interference even after all of this movement. As Baltimore suggests, it will be difficult to perform relocation while operating the system in a 24 X 7 mode. The plan does not explain how this risk can be minimized or negated. The whole funding plan and legal approach proposed by the Consensus Plan is also risky in that Nextel who has operated for the past 14 of 15 years at a loss. Even if this plan were adopted, Nextel could have major financial problems over the next 4 years and be unable to follow through

with the funding. This might be brought on by the planned entry of Verizon and others into the exclusive push-to-talk market that has made Nextel such a success. According to Bloomberg news, Nextel was advised by bankers at late as 2001 to file for Chapter 11 bankruptcy.

Instead, we believe that those agencies that that are suffering from most from the inference should have Motorola furnish new portables or make modifications to existing portable radio receivers to reject the interference. Only the portable radios suffer from the interference. The base stations and mobiles have higher intermodulation rejection and

do encounter interference. The handhelds are the easiest to modify or replace since they are portable devices. Since Motorola has most of the state and local 800 MHz public safety market in the U. S., all in the Mid Atlantic area and they are the sole source

supplier to and a major stockholder of Nextel, they should be made to correct this problem by furnishing new/modified equipment and services. Motorola stands to financially benefit the most from funds spent to correct this public safety problem. Because Motorola essentially has a monopoly position in the 800 MHz trunked market, we believe that there has not been technical innovation in this market. This is why the portables do not have a higher intermodulation rejection specification and longer battery life. We believe that the Commission and DOJ should investigate Motorola market power in this market.

III. September 11 Communications Problems at the Pentagon and in New York City Add Urgency for Immediate Action by the Commission. The Consensus Plan will take about 4 years to implement and Public Safety cannot wait!

Last year the Washington Post and New York times published major articles on the breakdown of communications at the Pentagon and the World Trade Center. The Post Article referenced a report contracted for by Alexandria City and funded by a Federal Grant. "In the first few hours, foot messengers and bullhorns proved to be the most reliable form of communications". In the report[1] there is a quote "Where line of sight could be achieved, talk around was minimally effective." Arlington County was using a Motorola 800 MHz trunked radio system. The report does not go into enough depth to determine whether the breakdown was cause by interference, overload, etc. In "talk around" mode where two units can communicate directly over a short line of sight distance, one can only conclude that some external factor such as interference caused the failure to communicate at the Pentagon.

A front page article in the New York Times[2] states that the Fire Department issued

[1] Arlington County Report written by Titan Systems Report at Page A-36
[2] See n. 2 supra

evacuation orders for the North Tower just after the collapse of the South Tower which gave firefighters 21 minutes of warning. "Yet most of the firefighter never heard those warnings". "Their radio system failed frequently that morning". "Cut off from critical information, at least 121 firefighters, most in striking distance of safety, died when the north tower fell". It is not clear where the Fire Department was using their new 2,700 Motorola Digital Astro Portables or had fallen back to their older system because of earlier failures of their Motorola 800 MHz trunked system. McKinsey Consulting has been hired by NYFD to study the problem.

We do not believe that the either the Pentagon or World Trade incidents represent a major stressing of Public Safety Communications. A far larger problem could arise following the explosion of a "dirty bomb" in the downtown area of Washington, D. C. where thousands of Police and Fire would be trying to communicate over many days. Public Safety does not need a "wild card" problem created by interference from CRMS systems and needs a solution that will fix this problem within a year using a low risk solution.

IV. MTC recommends that the Motorola Portables be modified to increase intermodulation reject by 4 or 5 dB.

We have reviewed most of the reply comments and none of the other parties that objected to the Consensus Plan focused on the fact that only the portable radio receivers are impacted by interference problems. The base stations and mobile radios have adequate

receivers. In a presentation to the Commission[3] by Mr. Bruce Oberlies of Motorola, he presents chart 13 which states that an improvement to 80 dB for intermodulation would

[3] Public Safety 800 MHz Interference to FCC – Motorola - Sept. 19, 2002 by Bruce Oberlies

require the doubling of battery capacity. We will focus on the Motorola XTS 3000 which in use by most of the Public Safety users in the Baltimore/Washington area. They include

Baltimore City, Montgomery County, Fairfax, etc. The standard 8 hour battery supplied with this radio is a NiCad with about 1800 Mah. He states that the "highest density batteries don't work in the cold". I believe that he is referring to NiMh or LiOn batteries. Both of these battery technologies have more than double the capacity and thereby could meet the "one shift" goal. In fact, Motorola is selling Baltimore City and Montgomery County their NiMh batteries. We have a Motorola XTS 3000 compatible battery that has 4000 Mah capacity. While it is true that in extreme cold NiMh does lose some capacity, a policeman or firemen is likely to have the radio under his coat or in and out of warmer spaces such as a car or building and never see the coldest temperatures.

We believe that Motorola or another firm could produce a modification to the Motorola XTS3000 that would increase the IMR by the 4 or 5 dB necessary to solve the interference problem. This modification could be similar to the one made to the MTS2000

in King County or some type of external filter. As we have proven, there is currently available battery capacity that is double Motorola standard battery offering if additional power is needed.

In the Motorola XTS 3000, there are a series of boards that make up the portable. One of the three or four is the transmitter/ receiver board which could be modified or replaced in the field by any radio shop. It would require an upgrade or a modification to be built by a manufacturer and shipped to field radio shops. The board could be recycled with the modification.

We believe the Commission should request ideas from the various radio manufacturers including Motorola as to the feasibility of our approach. This would negate the need for this huge, expensive, and risky upheaval in the 800 MHz band as proposed by the Consensus Parties.

V. Motorola should be required to help fund these moves or the modifications since they are basically the Sole Source Supplier to Nextel and State/Local Public Safety Agencies and Create these problems. In addition, we believe the Commission should request that the DOJ and FTC agencies review the Marketing Practices and Market Share of Motorola in the 800 MHz Trunked Public Safety Market.

In an article in Mobile Radio Technology titled "Battling Bat Wings"[4] Mr. Schwaninger reports that Motorola manufacturers all of the Nextel base station equipment and subscriber units. They are also a major stockholder in Nextel. He also correctly points out that they are the leading supplier of Public Safety Equipment and have known for years that IDEN technology causes harmful interference. In the Baltimore/Washington area all of the 800 MHz Public Safety trunking systems are Motorola. There was little or token competition for these large contracts. Montgomery County is spending over $160M for a new public safety system that is under construction.

Mr. Schwaninger points out that they should pay for part or all of the cost of relocation since they created the problem. In the Motorola design system such as Montgomery County they have failed to follow their own Best Practices Design Guide. They have located towers and sites in Germantown and North Rockville to serve the 2nd largest city in Maryland – Gaithersburg. Nextel has one of their largest sites on the

[4] Mobile Radio Technology - May 1, 2002 - by Robert H. Schwaninger, Jr. http://www.mrtmag.com

Asbury Methodist home in the central Gaithersburg. This is a classical Near-Far Scenario

which Motorola recommends avoiding in the Best Practices Guide.

In a memo from the County Attorney[5] of Fauquier County regarding the negotiations with Motorola for a new 800 MHz trunking systems he states that "Negotiations, however, have not been without issue and Motorola, **in its capacity as a near monopoly,** has often refused to negotiate on specific language." Also published on the county web site is the County's failed attempted to negotiate Motorola into a positions to hold Fauquier County harmless should there be the type of interference covered by Docket 02-55.

Were there competition in this market from other radio vendors, then we believe that there would be other equipment vendors who might have a different receiver that would work with the Motorola systems but have a higher or a non-linear intermodulation rating. However all of the Baltimore/Washington Trunked 800 MHz bids that we are familiar with have been bundled contracts. Motorola has successfully convinced the cities and counties who have bought system to buy the consoles, tower, base stations, microwave, portables and mobiles all in one long term contract(3 to 5 years). This means that a competitor who could develop a better portable or mobile that might have interference protection will find no market for it since Motorola has a lock on the marketplace. We are focusing on the portables since this is the chief device that Motorola claims can't be improved because of battery life. Currently Motorola is delivering to the local public safety users the XTS 3000 which is a 5 to 7 year old technology. In the competitive cellular marketplace, Motorola announces new products every 6 months. The radios that

[5] Memo from Paul S. McCulla, Fauquier County Virginia – January 11, 2002 to Board of Supervisors

Motorola is current delivering to the Baltimore/Washington area have a proprietary interface that they control through patents and royalties. The radio systems are not APCO Project 25 compliant. The only true reported APCO 25 system being installed is the Michigan State Police[6]. They are Motorola's Astro products, which uses their Smartnet II 3,600 baud control channel architecture. Smartnet trunking is a 15 year old technology built on an analog base.

A second indicator is higher prices. In the early 1990's we competitively won the Prince William County, Virginia Police UHF Portable Radio Contract against Motorola. Their initial bid was over $2,000 per portable versus our $1,000 bid using a Bendix King radio. This contract has been rebid four times in three year options and we have won each time. In fact, they have not bid directly in the last nine years since they know that they are not competitive. Motorola has recently sold the XTS 3000 to all of the local public safety agencies for a discounted price of approximately $3,000! This is three times the price of our 800 MHz trunked portable and our UHF radio sold to Prince William, Baltimore City, etc. While the Motorola digital Astro radio has some additional circuitry, it does not have 3 times the factory cost.

One can purchase, without a tie in to a Nextel subscription, a Motorola IDEN handheld for $300 with far more function such as paging, browser, and a 3 day battery life

One can only conclude that Motorola is making a huge profit and has a monopoly in the

[6] Trunkedradio.net Web Site

800 MHz Public Safety State and Local market! We believe the Commission should refer

all of the comments in this proceeding to the Department of Justice and Federal Trade

Commission to see if they believe Motorola has done anything illegal or unfair. If there is

a finding against Motorola, then they could be forced to furnish the proposed

modifications to their portables or give the customer new units as a form of settlement.

VI. We Suggest that the Commission Temporally Suspend the Construction and Licenses of Public Safety Agencies in 800 MHz that have not Fully Cut Over until the Commission publishes their Rules on this NPRM.

Given the overwhelming reports of problems, it seems "like pouring more gasoline

on the fire" to continue to permit more public safety agencies to build out their systems to

create more interference problems and potential dead zones for public safety officers. Public Safety Systems are 24 X 7 and so it will be difficult and take a lot of planning to move should the Consensus Plan be adopted. In the Washington Area counties such as Montgomery, Howard, Prince William , Fauquier and Somerset are all area candidates to have their licenses and construction authorization put on hold. Alexandria, Baltimore County, Anne Arundel, Washington D. C. Fire and Frederick, Md. are all in upgrade modes and should be advised to pause until some decision or direction is decided on this NPRM. We have contracts with some of these agencies and have seen some of the Motorola contracts. They all contain a clause to either cancel or put on hold any radio project because of a FCC rule change or problem.

In the event, the Commission chooses not to place licenses on hold, then they should not permit agencies that are not currently on line to obtain Nextel monies or any Federal

Grant should this the Commission adopt the Consensus Plan instead of our recommendation.

VII. Conclusions and Recommendations

Given the large number of 800 MHz problems documented in this NPRM and in the press, the events of September 11 and the Commission's role of protecting the public interest, we believe this NPRM should be fast tracked. We believe that the Consensus Plan is an expensive, high risk, legally challenging and at a minimum a 4 year plan that should be rejected by the Commission. We also question whether Nextel will be financially able to make $850M of installment payments.

We believe that the answer lies in following a technical strategy of improving the portable receivers in the urban areas where interference is encounter or predicted. In addition, Motorola should be forced to install and modify their systems such that they follow their own Best Practices Guide which we contend is not the case. The Commission should solicit all radio manufacturers to propose modifications to the Motorola Astro family such that the Receiver Intermodulation Rejection is increased by 5 dB. This change could be internal to the transmitter/receiver board or external to the portable. If additional power is needed we have shown that new battery technology which supplies two times the energy is available. We contend that Motorola should pay for these upgrades and changes since they supply almost all of the 800 MHz Trunked Systems and all of the Nextel equipment. They technically created these problem and should have anticipated a

solution.

Due to the urgency of this issue we would happy to meet with the Wireless Bureau to further explain our reply comments.

Respectfully submitted,

M. Heavener
MT Communications
Box 2171
Gaithersburg, Maryland 20886
301 926-1891 x2
Mtcomm@erols.com

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